



# Perspectives on COP 15

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# This is an easy talk to give ...

“The meeting has failed. It's unfortunate for the planet.”

*Evo Morales, Bolivian President*

“It's very disappointing, . . . but it is not a failure”

*Sergio Serra, Brazil's Climate Change Ambassador*

“We have made a start.”

*Gordon Brown, UK Prime Minister*

“The time for talk is over . . . we can embrace this accord, take a substantial step forward, continue to refine it and build upon its foundation.”

*Barack Obama, US President*

“The meeting has had a positive result.”

*Xie Zhenhua, Head of China's Delegation*

# A little history on the UNFCCC



- First presented for signature at 1992 Earth Summit in Rio de Janeiro
- Ultimate objective is to achieve stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system
- 194 countries have ratified it
- 2 Subsidiary bodies and the Conference of the Parties (COP)
- Annex I countries – industrialized countries – must report comprehensive inventories of emissions each year
- Developing countries – submit a national communication each year on emissions and reductions efforts





# The Kyoto Protocol

- Sets binding emissions targets for 37 industrialized countries and the European Community
  - Reducing emissions within countries
  - Sponsoring projects in developing countries to reduce emissions/increase removals (CDM)
  - Buying and selling certified emissions reductions with each other
- 184 countries have ratified the Protocol
- First commitment period ends in 2012
  - Ad-Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) established to discuss future commitments (beyond 2012 for industrialized countries under the Protocol. Does not include developing country actions under its scope.



# Bali Action Plan and the AWG-LCA

- A two-year roadmap for finalizing a comprehensive agreement in Copenhagen
- Establishes the Ad-Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA)
  - created to negotiate long-term cooperative action among the Parties on how to achieve the objective of the Convention, looking at a range of commitments from all Parties to the Convention
- Charts the course for a new negotiating process designed to tackle climate change, with the aim of completion by 2009 (COP 15).
- Includes Reducing Emissions from Deforestation REDD as a potential option to reach climate goals; guidance on REDD demonstration activities provided
  - Second “D”, degradation, is added.



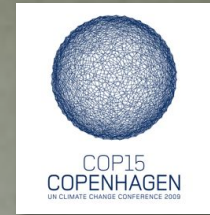
# Expectations for COP-15

- Conclusion of AWGs' work programs
- Resolution of the two track process (AWG-KP and AWG-LCA)
  - Two separate agreements or one agreement? Legally binding or politically binding?
- Is the United States going to participate? China? India?





# Copenhagen by the Numbers

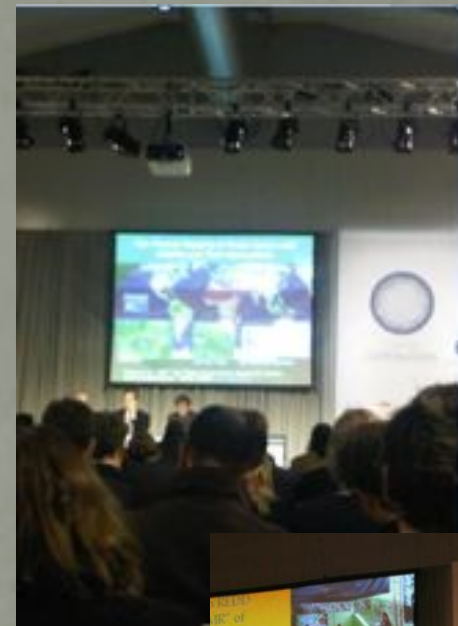


- 193 countries participated
- 119 Heads of state attended
- Over 8,000 Party negotiators
- Over 45,000 representatives accredited to attend
  - Actors = Subsidiary Bodies, AWGs, IPCC, Media, Civil society
  - Civil society includes NGOs, Indigenous peoples, IGOs, Trade organizations, Business community, Religious community, etc.



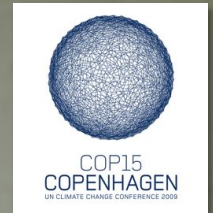
# Civil Society Participation

- Over 25,000 registered observers and media
- Over 100 Official side events and other actions, over 25 focused on REDD
- Third Forest Day, First Ocean Day
- Most input from
  - Science
  - Conservation (WWF, TNC, ...)
  - Advocacy (EDF, NRDC, ...)
  - Activists





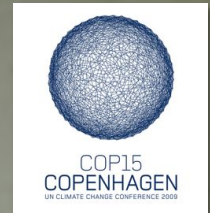
# Outcomes of COP-15



“We underline that climate change is one of the greatest challenges of our time. We emphasize our strong political will to urgently combat climate change in accordance with the principle of common but differentiated responsibilities and respective capabilities.”

Leading Statement in the Copenhagen Accord

# The Copenhagen Accord

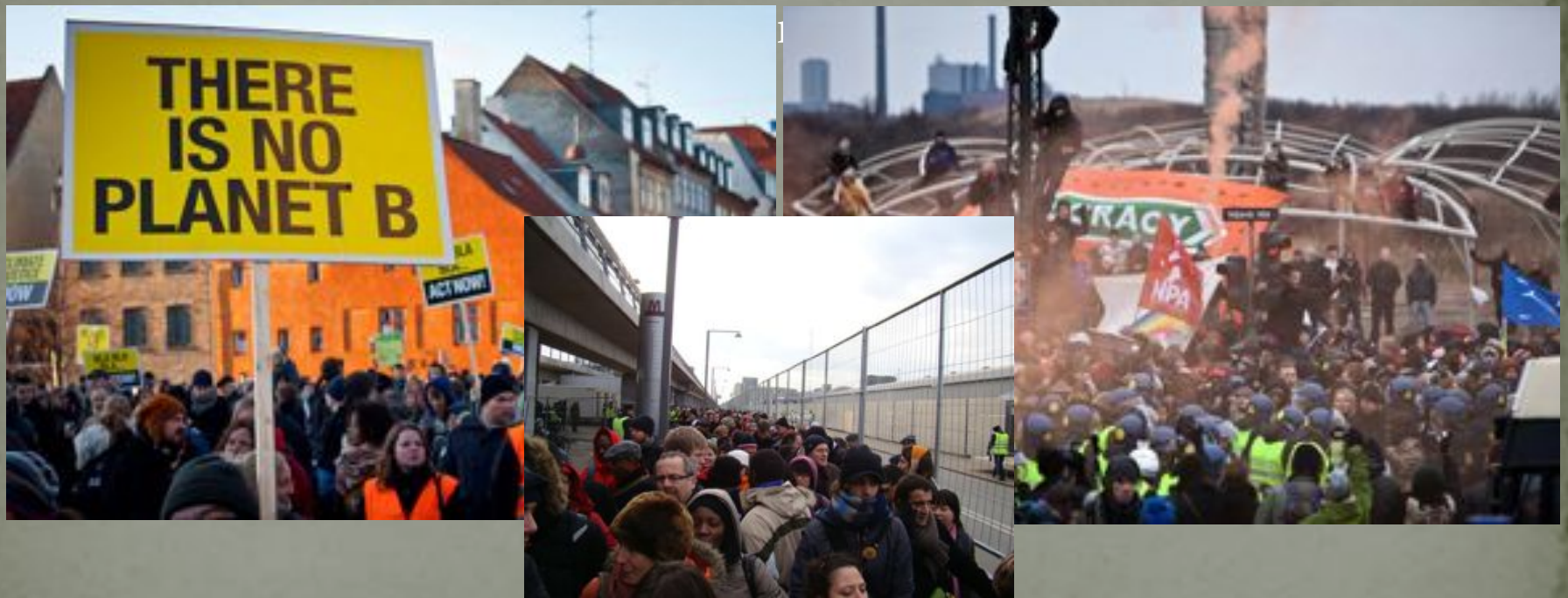


- Crafted outside of the UNFCCC process
- The UNFCCC “takes note” of the Accord
- 29 Heads of State crafted the Copenhagen Accord
  - Including China, India, and the U.S.
- Politically binding agreement
- As of March 12<sup>th</sup> 2010, 108 countries are either associated with or supportive of the Accord, most recently India and China
  - Represent 82 % of global emissions
  - 15 countries have submitted targets
- Recommends that the AWG-KP and AWG-LCA continue their work with a view to presenting the outcome of work to the COP for adoption at its 16th session in Mexico.

*A new era for climate change negotiations?*

# Wonderful, Wonderful Copenhagen

- Thousands of arrests - banning of observers Avaaz and Friends of the Earth from entering the Bella Center.
- All observers organizations restricted from the center during the second week



Hopenhagen - Chopenhagen - Hopelesshagen -  
Brokenhagen - Nopenhagen



# The Copenhagen Accord on the Bright Side

- Broad participation in drafting and in support
- Acknowledges 2°C as the limit, but also states that this may not be sufficient
- Outlines verification mechanisms
- Commitments to both short-term and long-term financing for developing countries for forest conservation, adaptation, technology development and transfer, and capacity building
- References importance of science and continued scientific assessment
- REDD+ considered one of the bright spots with text adopted by SBSTA and new funding commitments

# REDD

- Reducing Emissions for Deforestation and Forest Degradation in developing countries
  - A potential international policy mechanism under the UNFCCC that would make payments to developing countries for reducing emissions from deforestation and forest degradation
- Growing momentum for REDD to be included in a post-Kyoto agreement
  - Afforestation and Reforestation (A/R) not well utilized in CDM
  - cost effective solution (Stern review)



# The Road to Copenhagen for REDD

- **COP 3 Kyoto 1997**  
Compensated reduction of deforestation discussed, but not accepted under the Kyoto Protocol
- **COP 11 Montreal 2005**
  - Reducing Emissions from Deforestation in Developing Countries (RED) formally presented to UNFCCC by Costa Rica and Papua New Guinea
- **COP 13 Bali 2007**
  - REDD part of the Bali Action Plan





# REDD Activities leading to Copenhagen



- **UN-REDD Program** launched
  - Collaborative program between UN bodied Food and Agriculture Organization , UN Development Programme and UN Environmental Programme
- **World Bank Forest Carbon Partnership Facility** established
  - To build capacity for REDD in developing countries and test a program of performance-based incentive payments in select pilot countries
- Increased Activities to establish appropriate tools for monitoring
  - GOFC/GOLD Advances REDD Sourcebook
  - Google.org develops Earth Engine
  - Clinton Foundation establishes “Carbon Measurement Collaborative”
  - Group on Earth Observation establishes “Forest Carbon Tracking Task”
  - Research groups, produce relevant data sets largely with NASA assets and funding (Landsat time series, MODIS/GLAS biomass maps, pan-tropical radar data)

# Key Issues for REDD

- Scale – project, sub-national, national
- Scope – RED, REDD, REDD+, REDD++
  - REDD+ includes conservation, sustainable management of forests, afforestation/reforestation
  - REDD++ includes trees outside forests, agroforestry systems, other land sectors like agriculture and wetlands
- Financing – carbon market, fund, or hybrid approach
- Civil Society Engagement – participation of indigenous peoples, forest communities and other stakeholders in REDD design and implementation
- Capacity Building – assisting individuals, organizations, communities and governments through education, training, technology transfer and funding.
- MRV – systems for carbon stocks/emissions to be consistently and accurately monitored, reported, and verified (MRV)

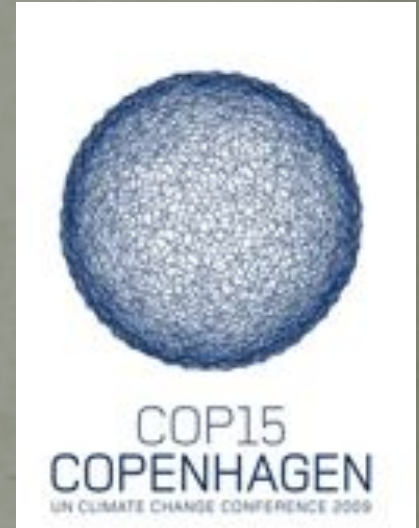
# Monitoring, Reporting and Verification

- MRV strategies are needed to address issues of :
  - **Leakage**
    - MRV needs: National wall-to-wall monitoring of changes in LU/LC to guard against leakage.
  - **Permanence**
    - MRV needs: Continuous time-series and spatially consistent monitoring to guarantee permanence.
  - **Baselines**
    - MRV needs: Time-series consistent monitoring to determine spatially-explicit baselines.
  - **Additionality**
    - MRV needs: National wall-to-wall monitoring + baseline information.



# REDD Summary at COP 15

- The REDD negotiations did not lead to a COP decision
- Negotiators did reach agreement on overall objectives, indigenous rights, and biodiversity safeguards (REDD+).
- Negotiators remained at odds over market financing and sub-national crediting.
- SBSTA draft decision with guidance on monitoring and measurement methodologies to establish national forest monitoring systems which uses a combination of remote sensing and ground-based forest carbon inventory approaches.



# Crucial Role of Remote Sensing for REDD, REDD+

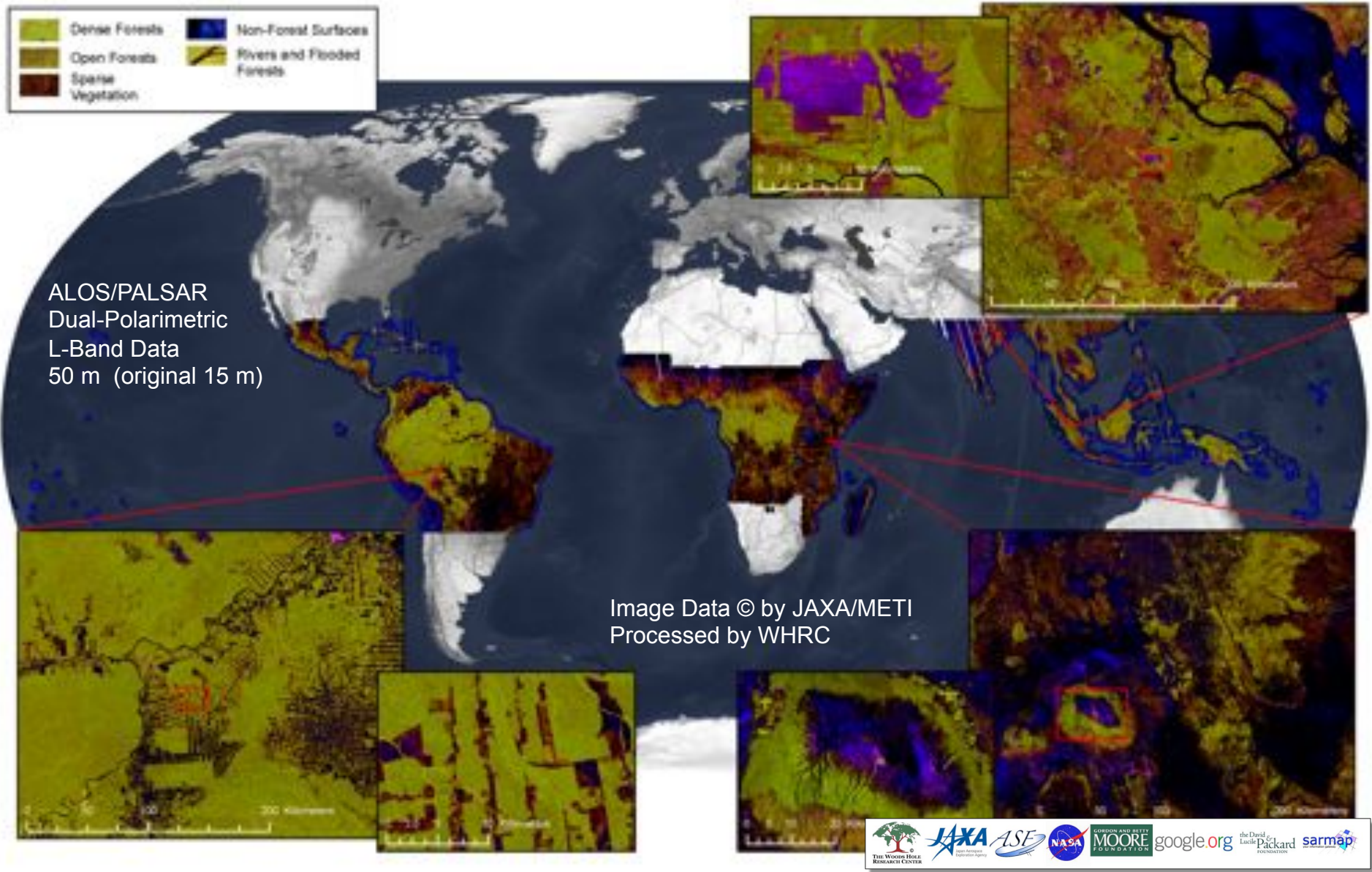
- REDD forces the "academic" area of satellite-based deforestation analysis toward a greater maturity and operational readiness.
- INPE's PRODES exemplifies how REDD will force the global implementation of verification and accounting tools that are transparent, validated, and reliable.
- Success of REDD requires better information on biomass for carbon accounting, biodiversity assessments - ties to NASA missions
- Improved parameterization for carbon accounting models - ties into more field work and access to national inventories
- COP15 stressed the need for data continuity
  - LDCM central, but also MODIS/VIIRS, building an L-Band SAR record, global vegetation lidar sampling
  - Research Missions to operational missions? Who has the mandate?

# Examples of Forest Remote Sensing in Copenhagen

- Google.org introduces Earth Engine with goal to provide easy data and analysis tools for forest monitoring (CLASLite implemented as first example)
- The World's Forests as Carbon Sinks and Sources - Masek
- GEO Task on Forest Carbon Tracking presented, many National Demonstrator countries chosen
- Various Biomass maps presented using MODIS, Lidar, field sampling
- Pan-tropical high-resolution 2007 radar mosaic from ALOS made available via Google Earth

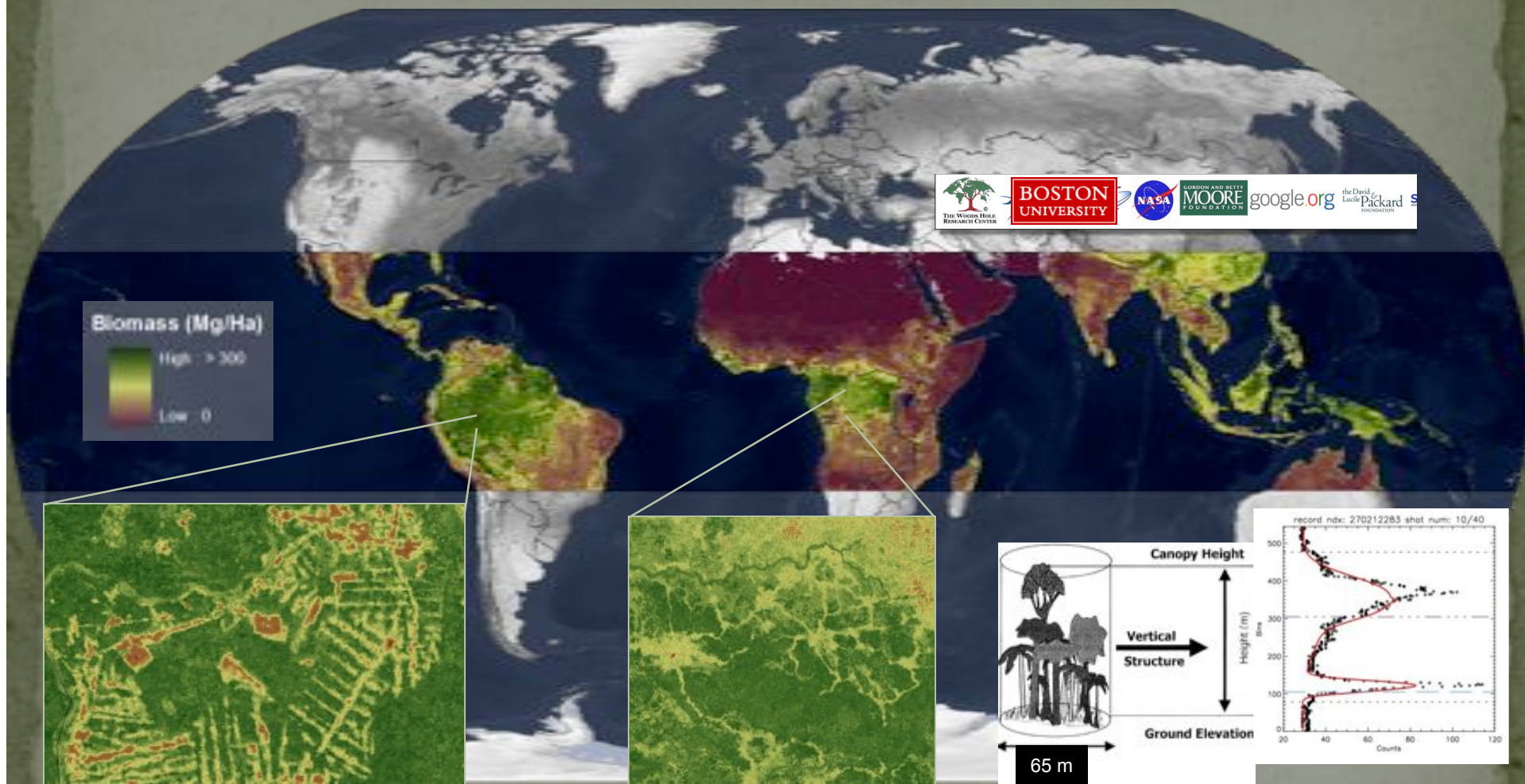


# Released in Copenhagen: Pan-Tropical ALOS L-Band SAR Mosaic 2007





# Released in Copenhagen: Biomass Map from MODIS/GLAS and Field Data



Amazon Basin

Dem. Rep. of Congo

Lidar ICESAT/GLAS Observations

- Baccini et al., 2009, "Pan-Tropical Forest Carbon Mapped with Satellite and Field Observations," WHRC, COP15, <http://whrc.org>
- Also released a map by Saatchi et al.

# Beyond REDD

- Need to account all GHG fluxes not central to the UNFCCC Carbon Trading and REDD:
  - Increased fire frequency in North America
  - Carbon in permafrost
  - Peat fire emissions
  - Drought feedbacks
  - Saturation of a northern hemisphere regrowth sink during the next century?
  - ...



# The Way Forward from Copenhagen

- The AWGs will continue through at least 2010, possibly into 2011
- The first meeting of the AWGs in 2010 will take place in 9 – 11 April, at which point Parties will discuss the roles of the AWGs and their schedules in the future
- Planning for COP 16 in Cancun in December 2010
  - Not yet known if agreements under the AWGs can be reached in 2010, or if Parties will decide to aim for COP 17 in South Africa in 2011
- Scientists Needed!

I want YOU at the next COP!







The End  
(Hopefully  
not!)

